FCS Lead Systems Integrator Contract

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The Future Combat Systems (FCS) program is a networked system-of-systems (SoS) serving as a core materiel building block within the Army's unit of action (UA). The program's goals are to equip Soldiers and field UAs to accomplish the operational and organizational (O&O) plan. The FCS program is more complex and far-reaching in scope than any other major defense acquisition program in Army history. The Boeing Co. was competitively selected by the Defense Advanced Research Projects Agency (DARPA) to serve as a Lead Systems Integrator (LSI), along with its partner Science Applications International Corp. (SAIC), for the concept and technology demonstration (CTD) phase in March 2002.

This award initiated a comprehensive partnership with the government to provide advanced technologies to support enhanced warfighting capabilities and techniques, effectively expanding and evolving the Army's 21st-century missions. An other transaction agreement (OTA) was selected as the contractual vehicle, providing a wide array of flexibility to the program and its objectives. Both DARPA and the Army cooperatively managed the CTD phase.

In May 2003, the Army awarded Boeing the FCS Systems Development and Demonstration (SDD) phase. Boeing and SAIC will continue their role as the LSI. While the selection of an OTA for the CTD seemed logical in the absence of an approved operational requirements document (ORD), the selection of an OTA for the SDD phase was a much bolder move by the Army. The SDD phase extends for 103 months (through December 2011) and is valued at $14.78 billion. Key program tenets will include:

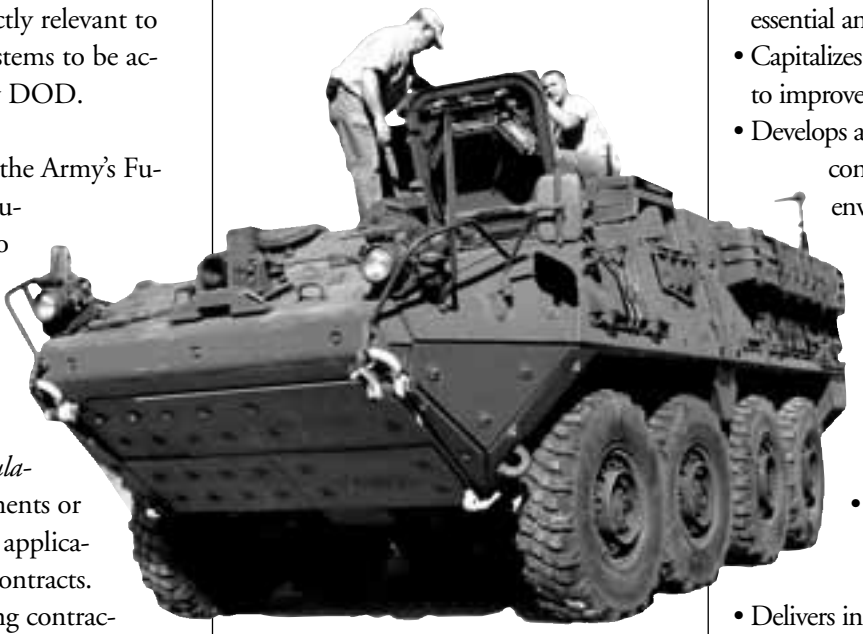
- Create opportunity for "best-of-industry" participation.
- Leverage the government technology base to the maximum extent possible.
- Associate ongoing enabling efforts with LSI-led activity.
- Provide a collaborative environment from design through life cycle.
- Provide commonality at component/subsystem level as a minimum.
- Design/plan for technology integration and insertion throughout project life cycle.
- Maintain and shape the future industrial base.
- Retain competition throughout Future Force acquisition.
- Guarantee government involvement in procurement processes.
- Ensure consistent and continuous requirements definition.
- Maintain and shape the government's acquisition community.
- Balance performance and sustainment, thereby ensuring program affordability.

Other Transaction Agreements

An OTA is the commonly used term referring to the *10 U.S.C. 2371* authority to enter into transactions other than contracts, grants or cooperative agreements. An OTA for prototype projects is an acquisition instrument authorized by *Section 845 of Public Law 103-160*, as amended, under *10 U.S.C. 2371*. Prototype projects acquired under this authority must be directly relevant to weapons or weapon systems to be acquired or developed by DOD.

FCS is the keystone of the Army's Future Force. These instruments are not subject to the federal laws and regulations governing procurement contracts. Therefore, they are not bound by the *Federal Acquisition Regulations (FAR)*, its supplements or laws that are limited in applicability to procurement contracts. OTAs are legally binding contractual agreements that provide a necessary organizational structure, serve a legal purpose and exchange of consideration and allow for innovative business arrangements based on sound business judgment and program needs.

The FCS program requires a unified effort across the Army, DARPA and industry for advancement of science, technology and engineering. The challenging schedule requires a high level of concurrency. The FCS program's key tenets dictate that innovative business arrangements must be allowed to achieve success. The schedule and funding constrain FCS to leverage the best available research and move it forward. This unprecedented effort requires a level of interaction, cooperation and collaboration that is unachievable with *FAR*-based procurement contracts. The use of an OTA in lieu of a *FAR*-based contract allows structuring to meet the program's needs and not as a one-size-fits-all. It also allows for flexible teaming arrangements, extensive government involvement and innovative provisions. The LSI concept is a unique business arrangement necessary to the FCS program's success.



Lead Systems Integrator

As the LSI, Boeing and SAIC have taken on many roles normally performed by the government as well as roles that a prime contractor would perform. The LSI's primary role is SoS integration. As the LSI, Boeing provides unbiased assessments to Army decision makers through programmatic, analytical and engineering processes. It maintains an optimal view of overall force effectiveness within the O&O plan, ORD, technology, cost and schedule constraints. The LSI provides integrated and balanced open architectures and specifications. As the Army's first large-scale SoS development and integration process across many disciplines and platforms, FCS requires a robust and dedicated organization experienced in large-scale systems integration. Boeing must enforce integrated, open architecture as a procurement agent and is responsible for successful verification and validation testing, using extensive systems integration and modeling and simulation capabilities.

Functioning as the SoS integrator and trusted industry partner, the LSI:

- Operates at the Army's direction throughout the program's life cycle.
- Tailors business strategies to only contain essential and cost-effective processes.
- Capitalizes on commercial best practices to improve acquisition and sustainment.
- Develops and maintains a government/contractor advanced collaborative environment.
  - Co-leads integrated product teams (IPTs) with the government.
  - Leads program management for industry team including cost, schedule and performance.
  - Implements program management best practices across industry team.
- Delivers integrated open architectures, specifications and interface definitions.
- Conducts SoS integration and performs system engineering.
- Develops and delivers the SoS common operating environment and network.
- Performs simulations and tests.
- Develops and demonstrates hardware, software, training and logistics.
- Provides quality assurance and configuration control.
- Maintains competitive industrial base.
- Maintains small business participation.
- Provides and maintains manufacturing facilities and manages production.
- Assures competition at component, subsystem and system level.
- Assures emphasis on commonality and design processes.
- Enhances SoS performance through continuous technology integration insertion.

FCS OTA Signing Ceremony: Shown left to right in each row are Dennis Muilenburg, Harry Hallock, Sean Garcia, Jeff Worley, Maureen S. Johnson and Pam Demeulenaere.

A key FCS program tenet is to maintain competition and create opportunities for the "best of industry" to participate. During the program's CTD phase, the LSI implemented these tenets by issuing 23 competitive solicitations to industry at large. All solicitations involved multiple contract years and millions of dollars in actual work content that would shape the FCS team. These solicitations were issued on a "best value" basis with the intent to attract the best technological approaches and the most reliable partners industry could offer. It was a remarkable feat that all solicitations were conducted simultaneously in approximately the same time it would take to conduct one source selection of this magnitude. Approximately 600 government and LSI subject matter experts were assembled to tackle this endeavor. The winning offerors selected have joined forces with the LSI to form a "One-Team" approach to FCS program challenges.

The LSI, its partners and the government have embraced the One-Team concept. This is accomplished through IPTs; co-locations at government and contractor facilities; use of an advanced collaborative environment as the single authoritative source of management, product and technology information; and program management plans that establish joint management procedures and processes.

The One-Team concept incentivizes the LSI, customer and industrial partners to share the same destiny.

A One-Team council was established along with subteams to develop strategies, approaches and processes. Subteam plans include:

- Establishing and using cost as an independent variable/life-cycle costing through an affordability process and plan.
- Establishing and using a seamless and timely earned-value management reporting system.
- Determining program metrics and reporting processes.
- Completing the program-wide definition and management reserve/ estimate-at-complete process implementation.

The LSI business arrangement is a relatively new concept and is being used on the Army's largest and most complex program. The shared destiny of the LSI, Army and industrial partners takes the IPT and the integrated product and process development management technique to the extreme. The SDD phase allows government personnel to perform scope-of-work efforts as the OTA requires. This is a unique arrangement and is being used only within the areas for which the government has the skills and experience. The government will retain its *Title 10* responsibilities for managing cost, schedule and performance, ensuring programmatic decisions are supported by analysis and compliance with OTA requirements.

Using an OTA as the contractual vehicle for the Army's FCS development has enabled it to complete and implement the program's basic tenets of attaining the best of industry, leveraging the technology base, forming a collaborative environment and having Joint IPTs. The FCS program has inherent challenges in managing such a diverse and complex program, but the program has a unique opportunity to be free ranging in selecting unconventional solutions to meet those challenges. Many aspects of this program make it stand out as one-of-a-kind, including the contracting instrument (OTA 845 for prototype projects), management type (LSI), business arrangements (industry- and government-shared destiny) and complexity (networked family-of-systems serving as a core building block within the Army's UA). The future holds the ultimate answer to the Army's fate in developing the largest and boldest renovation of its warfighting landscape.

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